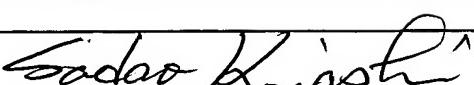


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|---|--|---|
| U.S. DEPARTMENT OF COMMERCE, PATENT AND TRADEMARK OFFICE  |  | DATE: December 29, 2004                             |
| TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE<br>(DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371   |  | U.S. Application No. (if known)<br><b>10/519802</b> |
| INTERNATIONAL APPLICATION NO.:<br><b>PCT/JP03/08334</b>   | INTERNATIONAL FILING DATE:<br><b>JUNE 30, 2003</b> | PRIORITY DATE CLAIMED:<br><b>JULY 1, 2002</b>       |
| TITLE OF INVENTION: <b>METAL-BASED RESISTANCE HEAT-GENERATION ELEMENT AND PRODUCTION METHOD THEREFOR</b>  |  |   |
| APPLICANT(S) FOR DO/EO/US: <b>Toshio NARITA</b>   |  |   |
| Applicant hereby submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:   |  |   |
| <p>1. <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371.</p> <p>2. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371.</p> <p>3. <input checked="" type="checkbox"/> This is an express request to begin national examination procedures (35 USC 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.</p> <p>4. <input checked="" type="checkbox"/> The US has been elected (Article 31).</p> <p>5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2)): <br/>       a. <input type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau).<br/>       b. <input checked="" type="checkbox"/> has been transmitted by the International Bureau.<br/>       c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US)</p> <p>6. <input checked="" type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).<br/>       a. <input checked="" type="checkbox"/> is attached hereto.<br/>       b. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4).</p> <p>7. <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))<br/>       a. <input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau).<br/>       b. <input type="checkbox"/> have been transmitted by the International Bureau.<br/>       c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.<br/>       d. <input checked="" type="checkbox"/> have not been made and will not be made.</p> <p>8. <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).</p> <p>9. <input type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).</p> <p>10. <input type="checkbox"/> An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).</p> |  |   |
| ITEMS 11. TO 20. BELOW CONCERN OTHER DOCUMENT(S) OR INFORMATION INCLUDED:   |  |   |
| <p>11. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98 together with the international search report, PTO-1449 and 3 references.</p> <p>12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.<br/>       ASSIGNEE NAME AND ADDRESS: <b>JAPAN SCIENCE AND TECHNOLOGY AGENCY, Kawaguchi-shi, Japan</b><br/>       Please publish the assignee data with the application.</p> <p>13. <input type="checkbox"/> A preliminary amendment.</p> <p>14. <input type="checkbox"/> An Application Data Sheet under 37 C.F.R. 1.76</p> <p>15. <input type="checkbox"/> A substitute specification.</p> <p>16. <input type="checkbox"/> A change of power of attorney and/or address letter.</p> <p>17. <input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 37 C.F.R. 1.821 - 1.825.</p> <p>18. <input type="checkbox"/> A second copy of the published international application under 35 U.S.C. 154(d)(4).</p> <p>19. <input type="checkbox"/> A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).</p> <p>20. <input checked="" type="checkbox"/> Other items or information: 5 sheets of drawings.</p>  |  |   |

| U.S. APPLICATION NO. (if known)<br><b>107519802</b>   |              | INTERNATIONAL APPLICATION NO.<br>PCT/JP03/08334   | DATE: December 29, 2004              |           |        |              |              |      |  |       |         |  |            |  |             |         |   |             |           |  |  |  |            |  |                               |  |  |             |  |   |  |  |  |  |  |  |  |  |  |            |  |  |             |  |   |  |  |  |  |                      |  |  |             |  |   |  |  |  |  |                       |  |  |             |  |  |  |  |                                      |          |
|---|--------------|---|--------------------------------------|-----------|--------|--------------|--------------|------|--|-------|---------|--|------------|--|-------------|---------|---|-------------|-----------|--|--|--|------------|--|-------------------------------|--|--|-------------|--|---|--|--|--|--|--|--|--|--|--|------------|--|--|-------------|--|---|--|--|--|--|----------------------|--|--|-------------|--|---|--|--|--|--|-----------------------|--|--|-------------|--|--|--|--|--------------------------------------|----------|
| 21. <input checked="" type="checkbox"/> The following fees are submitted:   |              | CALCULATIONS  | PTO USE ONLY                         |           |        |              |              |      |  |       |         |  |            |  |             |         |   |             |           |  |  |  |            |  |                               |  |  |             |  |   |  |  |  |  |  |  |  |  |  |            |  |  |             |  |   |  |  |  |  |                      |  |  |             |  |   |  |  |  |  |                       |  |  |             |  |  |  |  |                                      |          |
| Basic National Stage Fee  |              | \$ 300.00   |                                      |           |        |              |              |      |  |       |         |  |            |  |             |         |   |             |           |  |  |  |            |  |                               |  |  |             |  |   |  |  |  |  |  |  |  |  |  |            |  |  |             |  |   |  |  |  |  |                      |  |  |             |  |   |  |  |  |  |                       |  |  |             |  |  |  |  |                                      |          |
| National Stage Search Fee   |              | \$ 500.00   |                                      |           |        |              |              |      |  |       |         |  |            |  |             |         |   |             |           |  |  |  |            |  |                               |  |  |             |  |   |  |  |  |  |  |  |  |  |  |            |  |  |             |  |   |  |  |  |  |                      |  |  |             |  |   |  |  |  |  |                       |  |  |             |  |  |  |  |                                      |          |
| National Stage Examination Fee  |              | \$ 200.00   |                                      |           |        |              |              |      |  |       |         |  |            |  |             |         |   |             |           |  |  |  |            |  |                               |  |  |             |  |   |  |  |  |  |  |  |  |  |  |            |  |  |             |  |   |  |  |  |  |                      |  |  |             |  |   |  |  |  |  |                       |  |  |             |  |  |  |  |                                      |          |
| ENTER APPROPRIATE BASIC FEE AMOUNT =  |              | \$ 1,000.00   |                                      |           |        |              |              |      |  |       |         |  |            |  |             |         |   |             |           |  |  |  |            |  |                               |  |  |             |  |   |  |  |  |  |  |  |  |  |  |            |  |  |             |  |   |  |  |  |  |                      |  |  |             |  |   |  |  |  |  |                       |  |  |             |  |  |  |  |                                      |          |
| Surcharge of \$130.00 for furnishing the oath or declaration later than 30 months from the earliest claimed priority date (37 CFR 1.492(e)).  |              | \$ 130.00   |                                      |           |        |              |              |      |  |       |         |  |            |  |             |         |   |             |           |  |  |  |            |  |                               |  |  |             |  |   |  |  |  |  |  |  |  |  |  |            |  |  |             |  |   |  |  |  |  |                      |  |  |             |  |   |  |  |  |  |                       |  |  |             |  |  |  |  |                                      |          |
| <table border="1"> <thead> <tr> <th>CLAIMS</th> <th>NUMBER FILED</th> <th>NUMBER EXTRA</th> <th>RATE</th> <th></th> </tr> </thead> <tbody> <tr> <td>TOTAL</td> <td>9 -20 =</td> <td></td> <td>X \$ 50.00</td> <td></td> </tr> <tr> <td>INDEPENDENT</td> <td>4 - 3 =</td> <td>1</td> <td>X \$ 200.00</td> <td>\$ 200.00</td> </tr> <tr> <td colspan="3">Multiple dependent claims(s) (if applicable)</td> <td>+ \$360.00</td> <td></td> </tr> <tr> <td colspan="3">TOTAL OF ABOVE CALCULATIONS =</td> <td colspan="2">\$ 1,330.00</td> </tr> <tr> <td colspan="3">National Stage Application Size Fee-for each additional 50 sheets that exceeds 100 sheets<br/>\$ 250.00.</td> <td colspan="2"></td> </tr> <tr> <td colspan="3">Reduction by 1/2 for filing by small entity, if applicable. (Note 37 CFR 1.9, 1.27, 1.28).</td> <td colspan="2"></td> </tr> <tr> <td colspan="3">SUBTOTAL =</td> <td colspan="2">\$ 1,330.00</td> </tr> <tr> <td colspan="3">Processing fee of \$130.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(f)). +</td> <td colspan="2"></td> </tr> <tr> <td colspan="3">TOTAL NATIONAL FEE =</td> <td colspan="2">\$ 1,330.00</td> </tr> <tr> <td colspan="3">Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31).<br/>\$40.00 per property +</td> <td colspan="2"></td> </tr> <tr> <td colspan="3">TOTAL FEES ENCLOSED =</td> <td colspan="2">\$ 1,330.00</td> </tr> <tr> <td colspan="3"></td> <td>Amount to be:<br/>refunded<br/>charged</td> <td>\$<br/>\$</td> </tr> </tbody> </table> |              |   |                                      |           | CLAIMS | NUMBER FILED | NUMBER EXTRA | RATE |  | TOTAL | 9 -20 = |  | X \$ 50.00 |  | INDEPENDENT | 4 - 3 = | 1 | X \$ 200.00 | \$ 200.00 | Multiple dependent claims(s) (if applicable) |  |  | + \$360.00 |  | TOTAL OF ABOVE CALCULATIONS = |  |  | \$ 1,330.00 |  | National Stage Application Size Fee-for each additional 50 sheets that exceeds 100 sheets<br>\$ 250.00. |  |  |  |  | Reduction by 1/2 for filing by small entity, if applicable. (Note 37 CFR 1.9, 1.27, 1.28). |  |  |  |  | SUBTOTAL = |  |  | \$ 1,330.00 |  | Processing fee of \$130.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(f)). + |  |  |  |  | TOTAL NATIONAL FEE = |  |  | \$ 1,330.00 |  | Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31).<br>\$40.00 per property + |  |  |  |  | TOTAL FEES ENCLOSED = |  |  | \$ 1,330.00 |  |  |  |  | Amount to be:<br>refunded<br>charged | \$<br>\$ |
| CLAIMS  | NUMBER FILED | NUMBER EXTRA  | RATE                                 |           |        |              |              |      |  |       |         |  |            |  |             |         |   |             |           |  |  |  |            |  |                               |  |  |             |  |   |  |  |  |  |  |  |  |  |  |            |  |  |             |  |   |  |  |  |  |                      |  |  |             |  |   |  |  |  |  |                       |  |  |             |  |  |  |  |                                      |          |
| TOTAL   | 9 -20 =      |   | X \$ 50.00                           |           |        |              |              |      |  |       |         |  |            |  |             |         |   |             |           |  |  |  |            |  |                               |  |  |             |  |   |  |  |  |  |  |  |  |  |  |            |  |  |             |  |   |  |  |  |  |                      |  |  |             |  |   |  |  |  |  |                       |  |  |             |  |  |  |  |                                      |          |
| INDEPENDENT   | 4 - 3 =      | 1   | X \$ 200.00                          | \$ 200.00 |        |              |              |      |  |       |         |  |            |  |             |         |   |             |           |  |  |  |            |  |                               |  |  |             |  |   |  |  |  |  |  |  |  |  |  |            |  |  |             |  |   |  |  |  |  |                      |  |  |             |  |   |  |  |  |  |                       |  |  |             |  |  |  |  |                                      |          |
| Multiple dependent claims(s) (if applicable)  |              |   | + \$360.00                           |           |        |              |              |      |  |       |         |  |            |  |             |         |   |             |           |  |  |  |            |  |                               |  |  |             |  |   |  |  |  |  |  |  |  |  |  |            |  |  |             |  |   |  |  |  |  |                      |  |  |             |  |   |  |  |  |  |                       |  |  |             |  |  |  |  |                                      |          |
| TOTAL OF ABOVE CALCULATIONS =   |              |   | \$ 1,330.00                          |           |        |              |              |      |  |       |         |  |            |  |             |         |   |             |           |  |  |  |            |  |                               |  |  |             |  |   |  |  |  |  |  |  |  |  |  |            |  |  |             |  |   |  |  |  |  |                      |  |  |             |  |   |  |  |  |  |                       |  |  |             |  |  |  |  |                                      |          |
| National Stage Application Size Fee-for each additional 50 sheets that exceeds 100 sheets<br>\$ 250.00.   |              |   |                                      |           |        |              |              |      |  |       |         |  |            |  |             |         |   |             |           |  |  |  |            |  |                               |  |  |             |  |   |  |  |  |  |  |  |  |  |  |            |  |  |             |  |   |  |  |  |  |                      |  |  |             |  |   |  |  |  |  |                       |  |  |             |  |  |  |  |                                      |          |
| Reduction by 1/2 for filing by small entity, if applicable. (Note 37 CFR 1.9, 1.27, 1.28).  |              |   |                                      |           |        |              |              |      |  |       |         |  |            |  |             |         |   |             |           |  |  |  |            |  |                               |  |  |             |  |   |  |  |  |  |  |  |  |  |  |            |  |  |             |  |   |  |  |  |  |                      |  |  |             |  |   |  |  |  |  |                       |  |  |             |  |  |  |  |                                      |          |
| SUBTOTAL =  |              |   | \$ 1,330.00                          |           |        |              |              |      |  |       |         |  |            |  |             |         |   |             |           |  |  |  |            |  |                               |  |  |             |  |   |  |  |  |  |  |  |  |  |  |            |  |  |             |  |   |  |  |  |  |                      |  |  |             |  |   |  |  |  |  |                       |  |  |             |  |  |  |  |                                      |          |
| Processing fee of \$130.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(f)). +   |              |   |                                      |           |        |              |              |      |  |       |         |  |            |  |             |         |   |             |           |  |  |  |            |  |                               |  |  |             |  |   |  |  |  |  |  |  |  |  |  |            |  |  |             |  |   |  |  |  |  |                      |  |  |             |  |   |  |  |  |  |                       |  |  |             |  |  |  |  |                                      |          |
| TOTAL NATIONAL FEE =  |              |   | \$ 1,330.00                          |           |        |              |              |      |  |       |         |  |            |  |             |         |   |             |           |  |  |  |            |  |                               |  |  |             |  |   |  |  |  |  |  |  |  |  |  |            |  |  |             |  |   |  |  |  |  |                      |  |  |             |  |   |  |  |  |  |                       |  |  |             |  |  |  |  |                                      |          |
| Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31).<br>\$40.00 per property +   |              |   |                                      |           |        |              |              |      |  |       |         |  |            |  |             |         |   |             |           |  |  |  |            |  |                               |  |  |             |  |   |  |  |  |  |  |  |  |  |  |            |  |  |             |  |   |  |  |  |  |                      |  |  |             |  |   |  |  |  |  |                       |  |  |             |  |  |  |  |                                      |          |
| TOTAL FEES ENCLOSED =   |              |   | \$ 1,330.00                          |           |        |              |              |      |  |       |         |  |            |  |             |         |   |             |           |  |  |  |            |  |                               |  |  |             |  |   |  |  |  |  |  |  |  |  |  |            |  |  |             |  |   |  |  |  |  |                      |  |  |             |  |   |  |  |  |  |                       |  |  |             |  |  |  |  |                                      |          |
|   |              |   | Amount to be:<br>refunded<br>charged | \$<br>\$  |        |              |              |      |  |       |         |  |            |  |             |         |   |             |           |  |  |  |            |  |                               |  |  |             |  |   |  |  |  |  |  |  |  |  |  |            |  |  |             |  |   |  |  |  |  |                      |  |  |             |  |   |  |  |  |  |                       |  |  |             |  |  |  |  |                                      |          |
| <p>a. <input checked="" type="checkbox"/> A check in the amount of \$ 1,330.00 to cover the above fees is enclosed. (\$300.00 for basic national stage fee; \$500.00 for national stage search fee; \$200.00 for national stage examination fee; \$200.00 for 1 additional independent claim and \$130.00 for late filing of the declaration);</p> <p>b. Please charge my Deposit Account No. 50-2866 in the amount of \$ to cover the above fees. (A duplicate copy of this sheet is enclosed.)</p> <p>c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 50-2866.</p>   |              |   |                                      |           |        |              |              |      |  |       |         |  |            |  |             |         |   |             |           |  |  |  |            |  |                               |  |  |             |  |   |  |  |  |  |  |  |  |  |  |            |  |  |             |  |   |  |  |  |  |                      |  |  |             |  |   |  |  |  |  |                       |  |  |             |  |  |  |  |                                      |          |
| NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed to request that the application be restored to pending status.  |              |   |                                      |           |        |              |              |      |  |       |         |  |            |  |             |         |   |             |           |  |  |  |            |  |                               |  |  |             |  |   |  |  |  |  |  |  |  |  |  |            |  |  |             |  |   |  |  |  |  |                      |  |  |             |  |   |  |  |  |  |                       |  |  |             |  |  |  |  |                                      |          |
| Send All Correspondence To:   |              | WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP<br>1250 Connecticut Avenue, N.W.<br>Suite 700<br>Washington, D.C. 20036<br>CUSTOMER No. 38834 |                                      |           |        |              |              |      |  |       |         |  |            |  |             |         |   |             |           |  |  |  |            |  |                               |  |  |             |  |   |  |  |  |  |  |  |  |  |  |            |  |  |             |  |   |  |  |  |  |                      |  |  |             |  |   |  |  |  |  |                       |  |  |             |  |  |  |  |                                      |          |
| Typed or Printed Name: Sadao Kinashi  |              | Reg. No.: 48,075  |                                      |           |        |              |              |      |  |       |         |  |            |  |             |         |   |             |           |  |  |  |            |  |                               |  |  |             |  |   |  |  |  |  |  |  |  |  |  |            |  |  |             |  |   |  |  |  |  |                      |  |  |             |  |   |  |  |  |  |                       |  |  |             |  |  |  |  |                                      |          |
| Signature    |              | Date: December 29, 2004   |                                      |           |        |              |              |      |  |       |         |  |            |  |             |         |   |             |           |  |  |  |            |  |                               |  |  |             |  |   |  |  |  |  |  |  |  |  |  |            |  |  |             |  |   |  |  |  |  |                      |  |  |             |  |   |  |  |  |  |                       |  |  |             |  |  |  |  |                                      |          |

SK/yap